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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/641,595	08/18/2000	Michael Zimmer	JFH-A12898US	6641

24314 7590 03/18/2003
JANSSON, SHUPE & MUNGER, LTD
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EXAMINER

PARKER, FREDERICK JOHN

ART UNIT	PAPER NUMBER
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1762

DATE MAILED: 03/18/2003

17

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/641,845

Applicant(s)

Examiner

Group Art Unit

— The MAILING DATE of this communication appears on the cover sheet beneath the correspondence address —

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE — 3 — MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, such period shall, by default, expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- ☒ Responsive to communication(s) filed on 2/10/03
- ☐ This action is **FINAL**.
- ☐ Since this application is in condition for allowance except for formal matters, **prosecution as to the merits is closed** in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11; 453 O.G. 213.

Disposition of Claims

- ☒ Claim(s) 26-41 + 43-45 is/are pending in the application.
- Of the above claim(s) _____ is/are withdrawn from consideration.
- ☐ Claim(s) _____ is/are allowed.
- ☒ Claim(s) 26-41, 43-45 is/are rejected.
- ☐ Claim(s) _____ is/are objected to.
- ☐ Claim(s) _____ are subject to restriction or election requirement

Application Papers

- ☐ The proposed drawing correction, filed on _____ is ☐ approved ☐ disapproved.
- ☐ The drawing(s) filed on _____ is/are objected to by the Examiner
- ☐ The specification is objected to by the Examiner.
- ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. § 119 (a)-(d)

- ☐ Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119 (a)-(d).
- ☐ All ☐ Some* ☐ None of the:
- ☐ Certified copies of the priority documents have been received.
- ☐ Certified copies of the priority documents have been received in Application No. _____
- ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a))

*Certified copies not received: _____

Attachment(s)

- ☐ Information Disclosure Statement(s), PTO-1449, Paper No(s). _____
- ☒ Notice of Reference(s) Cited, PTO-892
- ☐ Notice of Draftsperson's Patent Drawing Review, PTO-948
- ☐ Interview Summary, PTO-413
- ☐ Notice of Informal Patent Application, PTO-152
- ☐ Other _____

Office Action Summary

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Response to Amendment

1. This Office Action is non-final to remedy an error made by the Examiner in the previous Office Action. All prior art rejections are accordingly withdrawn.

Claim Rejections - 35 USC § 112

2. The rejections under this heading of the previous Office Action are withdrawn in view of amendment. The new rejections are necessitated by amendment.

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

4. Claims 26, 38, 39 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

- Claim 26: line 4, "extruded thermoplastic material" lacks proper antecedent basis.

- Claim 38, last line, it is unclear whether or not the surface is in the "reactive state".

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- Claim 39: line 5, "molded thermoplastic material" and line 6 "heating steps" (plural) lack proper antecedent basis; line 7, it is unclear if the toner is directed into the initial or heated thermoplastic material.

Claim Rejections - 35 USC § 102

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless -

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

6. Claims 26-30, 35,36,38 are rejected under 35 U.S.C. 102(b) as being anticipated by Baxter et al US 5112717.

Baxter et al teaches a method of applying dry toner particles to a preheated sheet having a thermoplastic surface (having a Tg of 45-70 C), in which toner is electrographically (electrostatically, col. 3, 17-19) printed DIRECTLY onto a thermoplastic surface on sheet 1 after being preheated to soften the thermoplastic layer 9 (col. 3, 6 to col. 4, 54) (= "bringing the thermoplastic material into a material reactive state"). The toner is pushed and imbedded into the softened thermoplastic layer, where it is fixed during cooling (col. 5, 36-40),

inherently forming a bond between the toner and thermoplastic to cause fixing. Toner inherently and by definition is fine dry particles of resin and a colorant, e.g. carbon black; dictionary definitions are supplied as listed on the PTO-892, but are introduced strictly to show that toner inherently consists of resin and colorant). The reference utilizes only toner particles, and actually teaches away from other components such as fusing oils which cause blotching and reduce image quality. Thus, claim 26 is anticipated by Baxter et al.

It is apparent from figure 2 that only a surface portion of the thermoplastic layer is preheated to cause softening so as to carry out the method, per claim 27. Heating devices utilizing thermal energy are cited on column 4, 13-21) per claim 30. Per claim 36, a smooth surface is formed, see figure 2.

Claim Rejections - 35 USC § 103

7. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

8. Claims 31-34, 37, 39-46 are rejected under 35 U.S.C. 103(a) as being unpatentable over Baxter et al in view of Rimai et al US 4927727.

Rimai et al teaches a thermally assisted toner image transfer process, in which on column 3, 21-42 is set forth properties of toners. The toners disclosed are

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similarly fine-sized as Baxter et al, and utilize a thermoplastic binder (e.g. polycarbonate or styrene resins, col. 3, 65- col. 4, 17) with a Tg of 40-100 C, preferably 45-65 C, which is essentially the same Tg as that of Baxter et al. Criticality of Tg is explained to prevent clumping and damage to the substrate. It is apparent from column 4, 44-48 that toner particles may consist only of binder resin and colorant, without the requirement for additional components, although they may be added if necessary. Since Baxter et al is not limited to a specific toner, it would have been obvious to one of ordinary skill in the art at the time the invention was made to utilize the thermoplastic toner of Rimai et al in the process of Baxter et al because it meets the particle size requirement, and further has a similar Tg so that when heated, the toner would fuse both with adjacent toner particles and the substrate to cause improved adhesion without causing thermal damage to the thermoplastic substrate layer. Since the thermoplastic layer is softened by heating, it is apparent that similar thermoplastic toner would also undergo at least localized softening/ melting ("fluid" per claim 32) due to thermal transfer when contacting the softened substrate, which meets the limitation of claim 31 of "bringing the toner into a toner reactive state". Therefore, per claims 37, 39, and 43, use of a thermoplastic of the same type for both substrate to be softened and toner would have been

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an obvious variation because of the expectation of improved fusion/adhesion bonding between the two.

As to claim 43, it is the Examiner's position that the method of forming the thermoplastic substrate is irrelevant because processing method does not change the inherent materials properties of the substrate being printed. Hence it would have been obvious to apply the images using the process of Baxter et al in view of Rimai et al on any thermoplastic substrate, including a "molded" thermoplastic substrate since there would have been the expectation of successful and equivalent results, absent a clear and convincing showing of synergistic or unexpected results to the contrary.

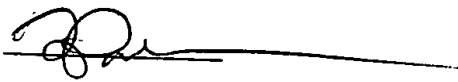
It would have been obvious to one of ordinary skill in the art at the time the invention was made to carry out the method of Baxter et al by incorporating the thermoplastic toners of Rimai et al to provide images which are adherently bonded to a thermoplastic substrate without causing damage to the substrate.

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9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Fred J. Parker whose telephone number is (703) 308-3474.



Fred J. Parker

March 12, 2003

2nf9-641595

**FRED J. PARKER
PRIMARY EXAMINER**